**Essential Curriculum Map**

**Subject: Math Unit: 1: Number Representation and Data Analysis Grade: 6 Year: 2009-2010**

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| **Connecticut**  **Frameworks**  **(Power) Standards** | **2.1.1 Locate and label whole numbers, fractions, decimals, and positive and negative integers on number lines, scales, coordinate grids (all four quadrants) and measurement tools. (SOCIAL STUDIES CONNECTION)**  **CC.6.NS.6b Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.**  **CC.6.NS.6c Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.**  **2.1.2 Compare and order whole numbers, fractions, decimals, and positive and negative integers in context using number lines and scales. . (SOCIAL STUDIES CONNECTION)**  **CC.6.NS.7a Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. For example, interpret –3 > –7 as a statement that –3 is located to the right of –7 on a number line oriented from left to right.**  **CC.6.NS.7b Write, interpret, and explain statements of order for rational numbers in real-world contexts. For example, write –3 degrees C > –7 degrees C to express the fact that –3 degrees C is warmer than –7 degrees C.**  **2.1.3. Represent and compare whole numbers (to a billion) and decimals (to thousandths) in expanded notation, e.g., 75.654 = (7 × 10) + (5 × 1) + (6 × 0.1) + (5 × 0.01) + (4 × 0.001).**  **GRADE 5-Scientific Notation with positive integers**  **2.1.4. Represent chain multiplication, including powers of 10 in exponential and standard form, e.g., 5 × 5 × 5 = 53 = 125.**  **CC.6.EE.1 Write and evaluate numerical expressions involving whole-number exponents.**  **2.1.5. Factor composite numbers and express them as a product of primes using exponents.**  **GRADE 4-4.OA4**  2.2.17. Determine when an estimate is sufficient or when an exact answer is needed.  ?????  2.2.20. Understand and use divisibility rules, factors of composite numbers and powers of 10 to find products and quotients.  **GRADE 5**  **2.2.21. Apply the order of operations and algebraic properties; i.e., commutative, associative, distributive, inverse operations, and the additive and multiplicative identities; to compute and solve multistep problems and explain solutions in writing.**  **GRADE 3-3.OA5**  **2.2.22. Use concrete models to develop strategies to add and subtract integers. (SOCIAL STUDIES CONNECTION)**  **CC.6.NS.6c find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.**  **\*3.2.6. Use and describe concrete strategies for finding the volume of rectangular solids and cylinders. (SCIENCE CONNECTION)**  **CC.6.G.2 Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas V = l w h and V = b h to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.**  **\*3.3.8. Select and use appropriate strategies, tools and units to estimate and solve measurement problems involving length, perimeter, area, volume, capacity, mass and weight. (SCIENCE CONNECTION)**  **CC.6.G.2 Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas V = l w h and V = b h to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.**  **CC.6.G.1 Find area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.**  **\*3.3.10. Use ratios and powers of 10 to convert between metric units. (SCIENCE CONNECTION)**  **CC.6.RP.3d Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.**  **\*4.1.2. Select, create and use appropriate graphical representations of data including, circle graphs, scatter plots, histograms, and stem and leaf plots. (SCIENCE CONNECTION)**  **CC.6.SP.4 Display numerical data in plots on a number line, including dot plots, histograms, and box plots.**  **\*4.2.3. Describe the shape of numerical data sets using measures of spread (range) and central tendency (mean, median, mode) and outliers. (SCIENCE CONNECTION)**  **CC.6.SP.2 Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.**  **CC.6.SP.3 Recognize that a measure of center for a numerical data set summarizes all of its values using a single number, while a measure of variation describes how its values vary using a single number.**  **\*4.2.4. Determine how the mean, median, mode and range change as a result of changes in the data set and describe in writing. (SCIENCE CONNECTION)**  **CC.6.SP.5 Summarize and describe distributions. Summarize numerical data sets in relation to their context, such as by:**  **a. Reporting the number of observations.**  **b. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement.**  **c. Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data was gathered.**  **d. Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data was gathered.** |
| **Big Ideas** |  |
| **Essential Questions** |  |
| **Concepts/Skills** | **Concepts – What students need to know about:**  **Skills – What students need to be able to do:** |